

Work Order ID 72807

Monday, August 15, 2011 2:33:21 PM



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Item ID:	D6104-003	Accept		Setup	Start	
Revision ID:					Stop	
Item Name:	Round Billet, 17-4					
Start Date:	8/15/2011	Start Qty:	30.00		Cust Item ID:	
Required Date:	8/26/2011	Req'd Qty:	30.00		Customer:	
Reference:						

Approvals:	Process Plan:	<u>CL</u>	Date:	<u>11/08/15</u>	Tooling:		Date:		Run	Start	
	QC:		Date:		SPC (Y/N):		Date:			Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6104	Rev B								

100		0.00							
	PURCHASING								
Purchasing	Memo	0.00							
Purchasing	Issue P/O: <u>14689</u> <input type="checkbox"/> a) Description: S.S round billet <input type="checkbox"/> b) Ø3.25" x 3.80" long <input type="checkbox"/> c) Tolerance on all dimensions are +0.030"/-0.000" <input type="checkbox"/> d) Material: 17-4PH Stainless steel (Ams 5643 or Aisi 630) <input type="checkbox"/> e) One blank makes 2 parts <input type="checkbox"/> f) Material certification required								

CL 11/08/16 30

110		0.00							
	Receive & Inspect for Damage & Mat'l Certs								
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								

PC 11/8/29 (30)

120		0.00							
	QC6- Inspect dimensions to drawing								
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D6104								

ark 11/08/29

30 ~~0~~

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 72807

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Item ID: D6104-003

Accept



Setup Start



Revision ID:

Stop



Item Name: Round Billet, 17-4

Start Date: 8/15/2011 Start Qty: 30.00



Cust Item ID:

Required Date: 8/26/2011 Req'd Qty: 30.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

Identify as per dwg & Stock Location **MAT47**

0.00

mf 11/08/29



Packaging

Memo

0.00

30

Ø

Packaging

140

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/8/29

11.08.29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 72807



Parent Item: D6104-003



Parent Item Name: Round Billet, 17-4



Start Date: 8/15/2011

Required Date: 8/26/2011

Start Qty: 30.00

Required Qty: 30.00

Comments: IPP B: ☐01.09.04 ☐Revised Step 2 SM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6104-003P  17-4 SS Roundbar 3.25"OD		Purchased	No			110	Each	0.0000	1 	30		<i>P4/8/29</i>	<i>(30)</i>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

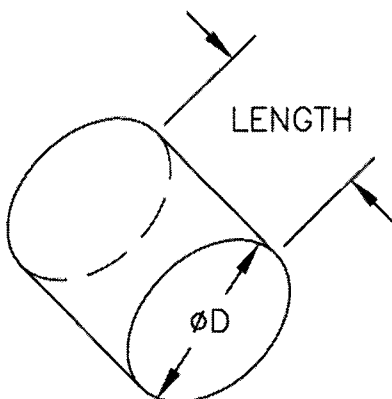


DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4 SCALE NTS	
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29 *[Signature]*

SPECIFICATION CONTROL DRAWING



C21108115

W10: 72807

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Shipment No:950481

Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 24-AUG-2011	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 950481-2	

Shipment Details	Final Destination Branch - MON
-------------------------	---------------------------------------

Order No 1651825	Line No 1	Item No 42470.MO	Description 3.2500.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.132.0000-156.0000 CUT TO 3.8 IN (+ .1250/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AISI 630,AMS 5643,ASME SA564,ASTM A564,UNS S17400				
Purchase Order No 14689		Part Number YOUR ITEM NUMBER: D6104-003		Ordered Qty 30 PCS		Invoice Qty 30 PCS	
Details							
Delivery No. 90496307	Mill	Heat Number 8XK0	Mech Id	PCS 30	Width (IN)	Length (IN)	Shipped Qty(LBS) 268

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:	Date:
--	-------

Castle Metals FP

HEAT NUMBER 8XK0
MECHANICAL ID _____
ITEM CODE 42470
LOT NUMBER _____
PO NUMBER 92567
RECEIPT DATE 4-20-2011
SUPPLIER NAS
SPECIFICATION _____
LCS AD
COMMENT _____
APPROVED PL



NORTH AMERICAN
STAINLESS

METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 636492 01 Mail To:
A.M. CASTLE AND COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60131

Customer: 0032 001

NAS Order: LN 70143 2

Your Order: 92567

Item Code: 42470

Ship To:
A.M. CASTLE AND COMPANY
3400 NORTH WOLF ROAD
FRANKLIN PARK IL 60131

Date: 4/17/2011 Page: 1 Of 1
Steel: 630(17-4)
Finish: Hot Finish
Dia/Thk: 3.2500 in
Leg Length:
Length: 144.00 in
Corrosion:

PRODUCT DESCRIPTION:

AMS 2303E, AMS 5643R
Round Bar, Hot Rolled, Annealed, Rough Turned
UNS S17400; EN 10204 3.1B, ASTM A484/08
ASTM A564/10 ASME SA564-07

REMARKS:

COMPLIES W/REQUIREMENTS OF DFARS EU DIRECTIVE 2002.95.
EC. RoHS. EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG IN USA
FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight	Bundle Weight
ED70675	1340								

CHEMICAL ANALYSIS CM(Country of Melt) ES(Span) US(United States) ZA(South Africa) JP(Japan)

Heat	Supplier #	CM	C	CB	CO	CR	CU	MN	MO	N	NI	P
8XX0		US	.051	.258	.04	15.25	3.42	.46	.14	.035	4.30	.026
			S	SI	TA	TI						
			.0174	.55	.0100	.0020						

MECHANICAL PROPERTIES

	1 d o i c r	HB No.	Ferr %	TS-C KSI	YS-C KSI	El-C %	RA-C %	RC-C No.
BD70675	R L	352.0	.40	202.22	178.47	12.25	46.92	42.0

NAS hereby certifies that the analysis on this certification is correct and the material meets the specifications stated.

QC ENGINEER

ERIC HESS